

Amendments to the Claims:

Claims 1-71 (canceled)

- 72) (new) A bone-enhancing composite comprising synthetic apatite and at least one supplementary bioactive agent selected from a biocompatible polymer and an anti-resorptive agent added *ab initio*, wherein the synthetic apatite comprises ionic calcium, phosphate, carbonate and at least one amino acid in monomeric or polymeric form.
- 73) (new) The bone-enhancing composite according to claim 72 wherein the biocompatible polymer is selected from a natural biocompatible polymer and a synthetic biocompatible polymer.
- 74) (new) The bone-enhancing composite according to claim 73 wherein said natural polymer is a polysaccharide.
- 75) (new) The bone-enhancing composite according to claim 74 wherein said polysaccharide is a glycosaminoglycan.
- 76) (new) The bone-enhancing composite according to claim 75 wherein said glycosaminoglycan is heparin or a heparin derivative.
- 77) (new) The bone-enhancing composite according to claim 72 further comprising at least one therapeutic agent.
- 78) (new) The bone-enhancing composite according to claim 77 wherein the at least one therapeutic agent is selected from the group consisting of antibiotics, antiviral agents, chemotherapeutic agents, anti-rejection agents, analgesics and analgesic combinations, anti-inflammatory agents, hormones, growth factors and cytokines.
- 79) (new) The bone-enhancing composite according to claim 78 wherein said at least one therapeutic agent is a growth factor.

- 80) (new) The bone-enhancing composite according to claim 79 wherein said growth factor is a fibroblast growth factor or an active fragment or variant thereof.
- 81) (new) The bone-enhancing composite according to claim 72 wherein said synthetic apatite is a poorly crystalline apatite.
- 82) (new) The bone-enhancing composite according to claim 72 wherein said synthetic apatite is a poorly crystalline apatite and said at least one supplementary bioactive agent is heparin or a heparin derivative.
- 83) (new) The bone-enhancing composite according to claim 82 further comprising fibroblast growth factor or an active fragment or variant thereof.
- 84) (new) The bone-enhancing composite according to claim 72 wherein the anti-resorptive agent is a bisphosphonate or a pharmaceutically acceptable salt or ester thereof.
- 85) (new) The bone-enhancing composite according to claim 81 wherein said poorly crystalline apatite having an X-ray diffraction pattern comprising a peak at a 2 theta value of about 26° and an undifferentiated peak at 2 theta values of about 31° to about 33°.
- 86) (new) A method for treating orthopedic, periodontal and craniofacial indications comprising administering to a subject in need thereof a therapeutically effective amount of a composition comprising synthetic apatite and at least one supplementary bioactive agent selected from a biocompatible polymer and an anti-resorptive agent added *ab initio*, wherein the synthetic apatite comprises ionic calcium, phosphate, carbonate and at least one amino acid in monomeric or polymeric form.
- 87) (new) The method according to claim 86 wherein said biocompatible polymer is a glycosaminoglycan.
- 88) (new) The method according to claim 87 wherein said glycosaminoglycan is heparin or a heparin derivative.

- 89) (new) The method according to claim 86 further comprising at least one therapeutic agent.
- 90) (new) The method according to claim 89 wherein the at least one therapeutic agent is selected from the group consisting of antibiotics, antiviral agents, chemotherapeutic agents, anti-rejection agents, analgesics and analgesic combinations, anti-inflammatory agents, hormones, growth factors and cytokines.
- 91) (new) The method according to claim 90 wherein said at least one therapeutic agent is a growth factor.
- 92) (new) The method according to claim 91 wherein said growth factor is a fibroblast growth factor or an active fragment or variant thereof.
- 93) (new) The method according to claim 86 wherein said synthetic apatite is a poorly crystalline apatite and said at least one supplementary bioactive agent is heparin or a heparin derivative.
- 94) (new) The method according to claim 93 further comprising fibroblast growth factor or an active fragment or variant thereof.
- 95) (new) The method according to claim 86 wherein the anti-resorptive agent is a bisphosphonate or a pharmaceutically acceptable salt or ester thereof.
- 96) (new) A method of preparing a bone enhancing composite comprising synthetic apatite and at least one supplementary bioactive agent selected from a biocompatible polymer and an anti-resorptive agent added *ab initio*, wherein the synthetic apatite comprises ionic calcium, phosphate, carbonate and at least one amino acid in monomeric or polymeric form, the method comprising the steps of:
- a) preparing a liquid mixture comprising ionic calcium, phosphate, at least one amino acid in either monomeric or polymeric form, carbonate, at least one supplementary bioactive agent selected from a biocompatible polymer and an anti-resorptive agent, optionally further comprising a therapeutic agent;

- b) subjecting said mixture to microwave irradiation;
 - c) quenching said irradiated mixture;
 - d) filtering said quenched mixture so as to separate between the filtrate and a cake;
 - e) drying said cake;
 - f) grinding said cake into a powder.
- 97) (new) The method according to claim 98 further comprising the following steps:
- g) sterilizing said powder;
 - h) wetting said sterilized powder with a solution optionally comprising at least one therapeutic agent;
 - i) preparing said wetted powder for administration.
- 98) (new) The method according to claim 96 wherein the biocompatible polymer is heparin or a heparin derivative.
- 99) (new) The method according to claim 96 further comprising at least one therapeutic agent.
- 100) (new) The method according to claim 99 wherein the at least one therapeutic agent is selected from the group consisting of antibiotics, antiviral agents, chemotherapeutic agents, anti-rejection agents, analgesics and analgesic combinations, anti-inflammatory agents, hormones, growth factors and cytokines.
- 101) (new) The method according to claim 100 wherein said at least one therapeutic agent is a growth factor.
- 102) (new) The method according to claim 101 wherein said growth factor is a fibroblast growth factor or an active fragment or variant thereof.
- 103) (new) The method according to claim 96 wherein the anti-resorptive agent is a bisphosphonate or a pharmaceutically acceptable salt or ester thereof.

- 104) (new) The method according to claim 96 wherein said synthetic apatite is a poorly crystalline apatite having an X-ray diffraction pattern comprising a peak at a 2 theta value of about 26° and an undifferentiated peak at 2 theta values of about 31° to about 33° .